CLAIMS

1. A handpiece comprising:

- means for receiving a first light beam emitted from a first light source,
- at least two components,
- a selector device being movable between at least two positions, each position corresponding to a component,
- means for moving the selector device between said at least two positions, thereby positioning a selected component in a beam path of the first light beam, the selected component providing one or more functions.

2. A handpiece according to claim 1, wherein the selected component provide a functionality selected from the group consisting of sensing, emitting a third light beam, emitting no light beam, and emitting a second light beam in response to the first light beam being incident on the selected component.

3. A handpiece according to claim 2, wherein the second or third light beam, if present, is emitted towards a target area or wherein the handpiece further comprises deflecting means for deflecting the second or third light beam, if present, towards a target area.

4. A handpiece according to any of claims 1-3, wherein the first light source comprises a laser device.

5. A handpiece according to claim 4, wherein the laser device is a laser diode.

6. A handpiece according to any of the preceding claims, further comprising deflecting moving means for moving the deflecting means and deflecting control means for controlling the moving means and being adapted to control the deflecting means so that the second or third light beam traverses the target area in a predetermined pattern.

7. A handpiece according to any of the preceding claims, wherein the selector device comprises an at least substantially circular disc, and wherein the means for moving the selector device comprises means for rotating the disc about an axis of symmetry of the disc.

8. A handpiece according to claim 7, wherein the at least two components are arranged annularly along the edge of the disc, and wherein a specific component is selected when a

portion of the disc comprising that component is rotated into the path of the first light beam.

9. A handpiece according to any of claims 1-6, wherein the selector device comprises an elongated plate, and wherein the means for moving the selector device comprises means for moving the plate at least substantially linearly along a longitudinal axis of the elongated plate.

10. A handpiece according to claim 9, wherein the at least two components are arranged along a longitudinal axis of the plate, and wherein a specific component is selected when a portion of the elongated plate comprising that component is moved linearly into the path of the first beam.

11. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is an optical component.

12. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is a non-linear medium.

13. A handpiece according to any of claims 11 or 12, wherein at least one of the optical component(s) is an optical lens.

14. A handpiece according to claim 13, wherein the target area is illuminated by a spot of a size determined by the optical lens selected.

15. A handpiece according to claim 14, wherein at least two of the optical components are optical lenses so that the spot size at the target area may be varied by selecting optical lenses having varied optical parameters.

16. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is a sensor providing information about the target area.

17. A handpiece according to claim 16, wherein the information provided comprises information about tissue parameters.

18. A handpiece according to claim 17, wherein the tissue parameters are selected from a group consisting of colour, temperature, texture, elasticity, size, shape, reflectivity, and scattering properties.

19. A handpiece according to any of claims 16-18, wherein the sensor is a camera.

20. A handpiece according to any of claims 16-19, wherein the sensor is a charge coupled device (CCD) camera.

21. A handpiece according to any of claims 16-19, wherein the sensor is a complementary metal-oxide semiconductor (CMOS) camera.

22. A handpiece according to any of claims 16-21, wherein the information from the sensor is displayed on a display.

23. A handpiece according to claim 22, wherein the displayed information comprises a map of tissue parameters.

24. A handpiece according to claim 23, further comprising image processing means for processing the map for enhancement of selected tissue conditions.

25. A handpiece according to claim 22 or 23, further comprising user interface means for user selection of specific mapped tissue areas for treatment.

26. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is a sensor for measuring the power of the first light beam.

27. A handpiece according to any of the preceding claims, wherein at least one of the at least two components provides a shutter function.

28. A handpiece according to claim 27, wherein the shutter is adapted to be operated on the basis of an output produced by a sensor measuring characteristics of the first light beam.

29. A handpiece according to claim 27 or 28, further comprising shutter cooling means for cooling the shutter.

30. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is a collimator for collimating the first light beam.

31. A handpiece according to any of the preceding claims, wherein at least one of the at least two components is a reflecting mirror being adapted to reflect at least a portion of the first light beam.

32. A handpiece according to claim 31, further comprising absorbing means adapted to absorb at least a substantial part of the light beam being reflected by the at least one reflecting mirror(s).

33. A handpiece according to claim 32, wherein the absorbing means is positioned on an inner surface of the handpiece.

34. A handpiece according to any of claims 31-33, further comprising a detector device for receiving at least a portion of the light beam being reflected by the at least one reflecting mirror(s), thereby gaining information relating to said light beam, and producing a corresponding output.

35. A handpiece according to claim 34, wherein the detector device is positioned on an inner surface of the handpiece.

36. A handpiece according to claim 34 or 35, wherein the handpiece is operated on the basis of the produced output.

37. A handpiece according to any of the preceding claims, further comprising at least one second light source for providing illumination of the target area.

38. A handpiece according to claim 37, wherein one of the at least one second light source(s) is one of the at least two components.

39. A handpiece according to claim 37 or 38, further comprising a distance piece for defining the distance between the output of the handpiece and the target area, wherein at least one of the at least one second light source(s) is/are mounted on said distance piece.

40. A handpiece according to any of claims 37-39, wherein at least one of the at least one second light source(s) is/are mounted at or near the output of the handpiece.

41. A handpiece according to any of claims 37-40, wherein at least a substantial part of the light output from at least one of the at least one second light source(s) has/have a wavelength in the infrared part of the electromagnetic spectrum.

42. A handpiece according to any of claims 37-41, wherein at least a substantial part of the light output from at least one of the at least one second light source(s) has/have a wavelength in the visible part of the electromagnetic spectrum.

43. A handpiece according to any of claims 37-42, wherein at least a substantial part of the light output from at least one of the at least one second light source(s) has/have a wavelength in the ultraviolet part of the electromagnetic spectrum.

44. A handpiece according to any of claims 37-43, the handpiece comprising a plurality of second light sources, wherein at least a substantial part of the light output from each second light source has a wavelength in the infrared, the visible or the ultraviolet part of the electromagnetic spectrum, and wherein the light from the plurality of second light sources may be combined.

45. A handpiece according to any of the preceding claims, further comprising tissue cooling means for cooling the tissue of the target area.

46. A handpiece according to any of the preceding claims, further comprising means for displaying an image on the target area.

47. A handpiece according to claim 46, wherein the image is displayed by means of light, at least a substantial part of which has a wavelength in the visible part of the electromagnetic spectrum.

48. A handpiece according to claim 46 or 47, wherein the means for displaying an image on the target area comprises a light emitting diode (LED).

49. A handpiece according to claims 46-48, wherein the means for displaying an image on the target area comprises a laser diode.

50. A handpiece according to any of claims 46-49, wherein the image is displayed by light having various wavelengths.

51. A handpiece according to any of claims 46-50, wherein the image is displayed by light having various intensity.

52. A handpiece according to any of claims 46-51, further comprising deflecting means adapted to cause the treating light beam to traverse the target area in a predetermined pattern, wherein the image displayed on the target area outlines the area(s) of the target area which would be treated if a corresponding pattern is selected.

53. A handpiece according to any of the preceding claims, further comprising a built-in light source for producing a treating light beam to be directed onto the target area.

54. A handpiece according to claim 53, wherein the treating light beam produced by the built-in light source is a highly focused light beam.

55. A handpiece according to claim 53 or 54, wherein the treating light beam produced by the built-in light source is adapted to form a spot on the target area, said spot having a high fluence and a small spot size.

56. A handpiece according to any of claims 53-55, wherein the built-in light source comprises a laser device.

57. A handpiece according to claim 56, wherein the laser device is a laser diode.

58. A handpiece according to any of claims 53-57, wherein the built-in light source is the first light source.

59. A handpiece according to any of claims 53-57, wherein the first light beam emitted from the first light source has a first wavelength and the treating light beam emitted from the built-in light source has a second wavelength, and wherein the first wavelength is different from the second wavelength.

60. A handpiece according to any of the preceding claims, further comprising a graphical display mounted on an upper surface of the handpiece.

61. A handpiece according to claim 60, wherein the display is adapted to display information in a user specified direction.

62. A handpiece according to any of the preceding claims, further comprising at least one external connection, said external connection(s) being connected to the handpiece in a direction being at least substantially parallel to a longitudinal axis of a handle of the handpiece.

63. A handpiece according to any of the preceding claims, further comprising an attachment part for removably attaching one or more device(s) to the handpiece.

64. A handpiece according to claim 63, wherein at least one of the one or more device(s) is a distance piece for defining the distance between an output of the handpiece and the target area.

65. A handpiece according to claim 63 or 64, wherein at least one of the one or more device(s) is a tissue cooling means for cooling the tissue of the target area.

66. A handpiece according to claim 65, wherein the attachment part comprises means for providing a cooling fluid to the tissue cooling means.

67. A handpiece according to claim 65 or 66, further comprising a sensor for measuring the temperature of the target area.

68. A handpiece according to claim 67, wherein the sensor is positioned on the tissue cooling means.

69. A handpiece according to any of claims 63-68, wherein at least one of the one or more devices is a second light source for illuminating the target area.

70. A handpiece according to any of claims 63-69, further comprising means for supplying power to at least one of the one or more devices.

71. A selector device for a handpiece, the selector device being movable between at least two positions, each position corresponding to positioning a component in a beam path of a first light beam, a component being selected when the selector device is moved to the position corresponding to that component, the selected component providing one or more specific functions.

72. A selector device according to claim 71, wherein the one or more specific functions are selected from a group consisting of sensing, emitting a third light beam, emitting no light beam, and/or emitting a second light beam in response to the first light beam being incident on the selected component.

73. A selector device according to claim 71 or 72, further comprising a substantially circular disc, and wherein the selector device is adapted to perform a rotating movement of the disc about an axis of symmetry of the disc, thereby moving the selector device into one of the at least two positions.

74. A selector device according to claim 73, wherein the components are arranged annularly along the edge of the disc, and wherein a specific component is selected when a portion of the disc comprising that component is rotated into the path of the first light beam.

75. A selector device according to claim 71, further comprising an elongated plate, and wherein the selector device is adapted to perform an at least substantially linear movement along a longitudinal axis of the elongated plate, thereby moving the selector device into one of the at least two positions.

76. A selector device according to claim 75, wherein the components are arranged along a longitudinal axis of the plate, and wherein a specific component is selected when a portion of the plate comprising that component is moved into the path of the first light beam.

77. A selector device according to any of claims 71-76, wherein at least one of the components is an optical component.

78. A selector device according to claim 77, wherein at least one of the optical component(s) is an optical lens.

79. A selector device according to any of claims 71-78, wherein at least one of the components is a sensor being adapted to provide information about a target area.

80. A selector device according to claim 79, wherein the sensor is a camera.

81. A selector device according to claim 79 or 80, wherein the sensor is a charge coupled device (CCD) camera.

82. A selector device according to claim 79 or 80, wherein the sensor is a complementary metal-oxide semiconductor (CMOS) camera.

83. A selector device according to any of claims 71-82, wherein at least one of the components is a sensor for measuring the power of the first light beam.

84. A selector device according to any of claims 71-83, wherein at least one of the components provides a shutter function.

85. A selector device according to claim 84, wherein the shutter is adapted to be operated on the basis of an output produced by a sensor measuring the characteristics of the first light beam.

86. A selector device according to any of claims 71-85, wherein at least one of the components is a collimator for collimating the first light beam.

87. A selector device according to any of claims 71-86, wherein at least one of the components is a light source for providing illumination of a target area.

88. A method for tissue treatment by means of a handpiece comprising at least two components and a selector device being movable between at least two positions, each position corresponding to a component, the method comprising the steps of:

- receiving a first light beam emitted from a first light source,
- moving the selector device to a predetermined position, so as to move the corresponding component into a beam path of the first light beam, thereby selecting said corresponding component,
- sensing, emitting a third light beam, emitting no light beam, or emitting a second light in response to the first light beam being incident on the selected component, by means of the selected component,
- emitting or deflecting the second or third light beam, if present, towards a target area on the tissue to be treated.

89. A method according to claim 88, wherein the first light beam is emitted from a laser device.

90. A method according to claim 89, wherein the first light beam is emitted from a laser diode.

91. A method according to any of claims 88-90, wherein the selector device comprises an at least substantially circular disc, and wherein the step of moving the selector device to a predetermined position comprises rotating the disc about an axis of symmetry of the disc.

92. A method according to claim 91, wherein the at least two components are arranged annularly along the edge of the disc, and wherein the step of moving the selector device to a predetermined position comprises moving a part of the disc comprising a selected component into the path of the first light beam.

93. A method according to any of claims 88-90, wherein the selector device comprises an elongated plate, and wherein the step of moving the selector device to a predetermined position comprises moving the plate at least substantially linearly along a longitudinal axis of the plate.

94. A method according to claim 93, wherein the at least two components are arranged along a longitudinal axis of the plate, and wherein the step of moving the selector device to a predetermined position comprises moving a part of the plate comprising a selected component into the path of the first light beam.

95. A method according to any of claims 88-94, wherein at least one of the at least two components is an optical lens, the method further comprising the step of illuminating the target area by a spot having a size which is determined by the lens in case that component has been selected.

96. A method according to claim 95, wherein at least two of the at least two components are optical lenses, the lenses having various optical parameters resulting in various spot sizes, the method further comprising the steps of:

- selecting a spot size by selecting a lens providing a spot of a corresponding spot size, and
- traversing the target area in a predetermined pattern of spots having the selected spot size.

97. A method according to claim 96, further comprising the steps of:

- subsequently selecting a second spot size by selecting a lens providing a spot of a corresponding spot size, and
- traversing the target area in a second predetermined pattern of spots having the second spot size.

98. A method according to any of claims 88-97, wherein at least one of the at least two components is a sensor, the method further comprising the step of obtaining information about the target area by means of the sensor.

99. A method according to claim 98, wherein the step of obtaining information about the target area comprises obtaining information about tissue parameters.

100. A method according to claim 98 or 99, further comprising the step of displaying the obtained information on a display or monitor.

101. A method according to claim 100, wherein the displayed information comprises a map of tissue parameters, the method further comprising the step of processing the map for enhancement of selected tissue features.

102. A method according to claim 101, further comprising the step of the user selecting specific mapped tissue areas for treatment.

103. A method according to any of claims 88-102, wherein at least one of the at least two components is a sensor, the method further comprising the step of measuring the power of the first light beam by means of the sensor.

104. A method according to any of claims 88-103, wherein at least one of the at least two components is a shutter, the method further comprising the steps of:

- measuring the power of the first light beam,
- comparing the measured power to a predetermined threshold value,
- opening the shutter when the power of the first light beam exceeds the predetermined threshold value,
- directing the second light beam towards the target area according to predetermined settings, and
- closing the shutter when the target area has been traversed according to the predetermined settings.

105. A method according to claim 104, wherein the predetermined settings comprise settings regarding the total duration of the traversing of the target area.

106. A method according to claim 104 or 105, wherein the predetermined settings comprise settings regarding the traversing pattern of the second light beam on the target area.

107. A method according to claim 106, wherein the predetermined settings comprise settings regarding the treatment time at each position to be treated.

108. A method according to any of claims 104-107, further comprising the step of alerting the user when the shutter has been closed.

109. A method according to any of claims 104-108, further comprising the step of alerting the user when the temperature of the shutter exceeds a predetermined threshold temperature.

110. A method according to any of claims 104-109, further comprising the step of cooling the shutter.

111. A method according to any of claims 88-110, further comprising the step of deflecting the second or third light beam with movable deflecting means so that the target area is traversed by the second light beam in a predetermined pattern.

112. A method according to any of claims 88-111, further comprising the step of illuminating the target area by means of a second light source.

113. A method according to any of claims 88-112, further comprising the step of cooling the target area.

114. A method according to any of claims 88-113, further comprising the step of displaying an image on the target area.

115. A method according to any of claims 88-114, further comprising the step of producing a treating light beam from a built-in light source.

116. A method according to any of claims 88-114, further comprising the step of emitting the first light beam from a built-in light source.

117. A method for tissue diagnosis of tissue at a target area by means of a handpiece comprising at least two components and a selector device being movable between at least two positions, each position corresponding to a component, the method comprising the steps of:

- illuminating the target area,
- deflecting light reflected from the target area onto a predetermined position,
- obtaining information about the target area by moving the selector device to the predetermined position, so as to move a selected component into a beam path of the light reflected from the target area.

118. A method according to claim 117, wherein the step of obtaining information about the target area comprises obtaining information about tissue parameters.

119. A method according to claim 117 or 118, wherein the selected component obtaining information about the target area is a sensor.

120. A method according to claim 119, wherein the sensor comprises one or more array(s) of sensors.

121. A method according to any of claims 117-120, wherein the step of obtaining information comprises moving another of the at least two components into a beam path of the light reflected form the target area.

122. A method according to claim 121, wherein the first and the other components are sensors being sensitive to reflected light of different wavelengths.

123. A method according to any of claims 117-122, further comprising the step of processing the information obtained.

124. A method according to any of claims 117-123, further comprising the step of displaying the obtained information on a display or monitor.

125. A method according to claim 124, wherein the displayed information comprises a map of tissue parameters, the method further comprising the step of processing the map for enhancement of selected tissue features.

126. A method according to any of claims 117-125, further comprising the step of storing the information obtained.

127. A method according to claim 126, further comprising the step of displaying a map of tissue features on the target area.